SIEMENS

Uroskop ACCESS

SP

Troubleshooting Guide

System

Image quality - ASPIA Imaging System

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Safety information

General safety information

⚠WARNING

Danger of property damage, injury, death!

Non-observance can lead to property damage, injury or death.

- ➪ **Observe the general safety instructions in this document, in the document "Medical Products; Safety Information; System" (TD00-000.860.01) and the safety instructions in accordance with ARTD part 2.**

General safety information - electrical

⚠WARNING

Electrical safety!

Non-observance can lead to property damage, serious injury or death.

- ➪ **After the covers are opened, parts under voltage are exposed. To prevent hazards, the system must be disconnected from the power source before the covers are opened.**
- ➪ **If it is necessary to work on the system while it is under live voltage, the general safety instructions according to document "Medical Products; Safety Information; System" (TD00-000.860.01) must be observed.**

⚠CAUTION

Parts under voltage!

Non-observance can lead to property damage.

- ➪ **Observe ESD guidelines when working on the system.**

Safety information - mechanical

⚠CAUTION

Danger of burns from hot parts or components!

Non-observance can lead to minor or moderate burns, especially to the hands.

- ➪ **After cover panels are opened, components (especially cooling elements and high-performance parts) that can reach temperatures > 50°C are exposed.**
- ➪ **To prevent burns caused by touching parts and components, the system must be switched off and allowed to cool down for at least 5 minutes.**

⚠CAUTION

Danger of injuries from mechanical parts!

Non-observance can lead to minor to moderate injuries, especially to the hands. After covers are opened, parts such as plugs, threaded bolts, cut-off cable ties and component edges can be accidentally touched, possibly resulting in contusions, abrasions and cuts, especially on the hands.

- **➪ Perform such work with special caution.**
- **➪ Wear suitable protective gloves.**

Prerequisites

The names of menu items on screens can differ depending on the user language chosen (regional settings). The menus mentioned in this document are based on the English language.

Required documents

ARTD (Safety and Radiation Protection Guidelines)	ARTD, part 2 (ARTD-002.731.02)
Document “Replacement of Parts“ of relevant monitor type	TD00-000.841.XX.XX
Installation and Start-up; Urodynamic Interface/Scan Converter	SPL5-330.814.01.XX
Medical Products; Safety Information; System	TD00-000.860.01.XX
Quality Assurance; System; Image Quality Quick Test	SPL5-330.820.01.XX
Replacement of Parts; Basic Unit and Imaging System	SPL5-330.841.01.XX
Startup; System; UROSKOP Access Imaging System VA14A	SPL5-330.815.05.XX
UROSKOP Access Operating Manual	n. a.

Required aids and tools

NOTE

All required tools, measuring equipment, and auxiliary equipment, except for the customary installation tools, are listed and specified in the Service Tools Catalogue (contained in the Spare Parts Catalogue).

Service patient

NOTE

“Service Patient“ under “Local Database“ is displayed in the patient browser only if the Service Software Home menu is opened.

Abbreviations

CRT	Cathode ray tube
ESD	Electrostatically-sensitive device
IQ	Image quality
LIH	Last image hold
UI	User interface

NOTE

In case of problems with monitor image quality, proceed as described below.

- Check the settings of the monitor affected, using the monitor's operating instructions (located on site, at the system, in the system folder, or available from the monitor manufacturer).

NOTE

The default values for monitor adjustment are filed in the document "Replacement of Parts" for the specific monitor type (TD00-000.841.xx.xx).

NOTE

Before further troubleshooting, load the "EXP_TestimageExposure" test image (SMPTE test image) from the Local Database in the Patient Browser (under "IQ test images") (Fig. 1 / p. 8) into the Viewer (Fig. 2 / p. 9) and display the test image on all on-site system monitors.

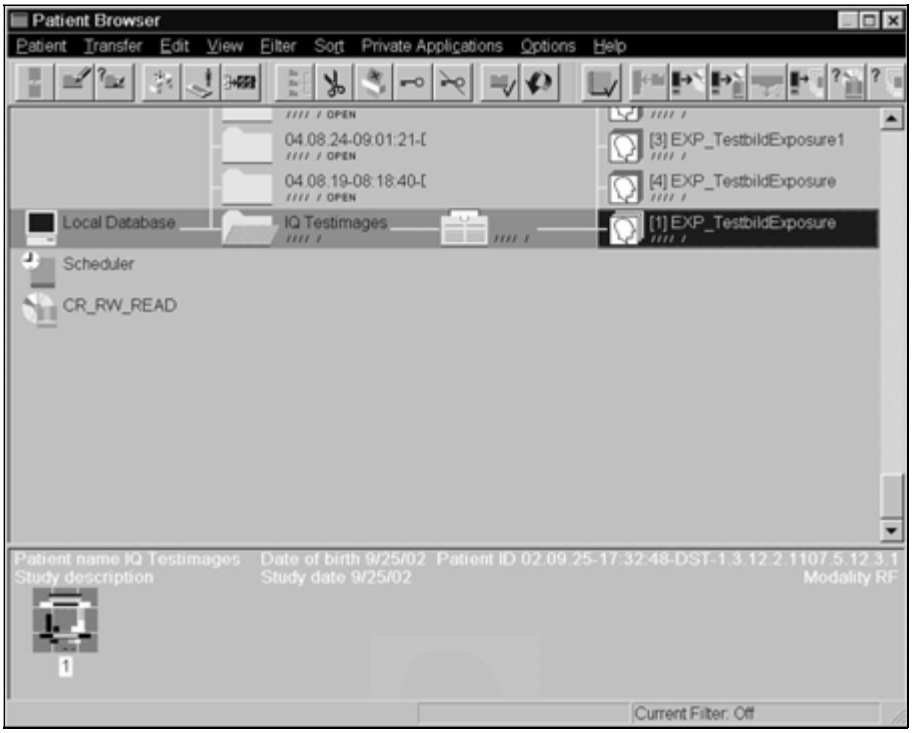

Fig. 1: Patient Browser_IQ Test images

NOTE

The live image is displayed on the reference monitors when the "Copy to references" button in the "Viewer" task card is clicked (see also UROSKOP Access operating manual).

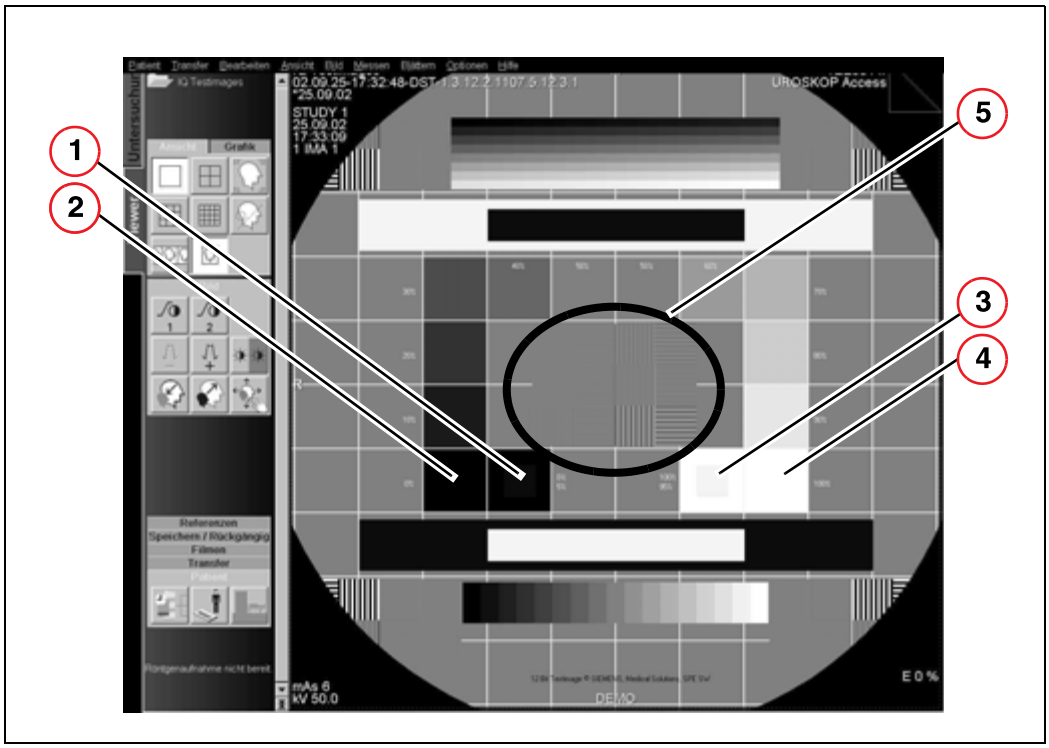

Fig. 2: Viewer

Pos. 1 5% field
Pos. 2 0% field
Pos. 3 95% field
Pos. 4 100% field
Pos. 5 vertical and horizontal line groups

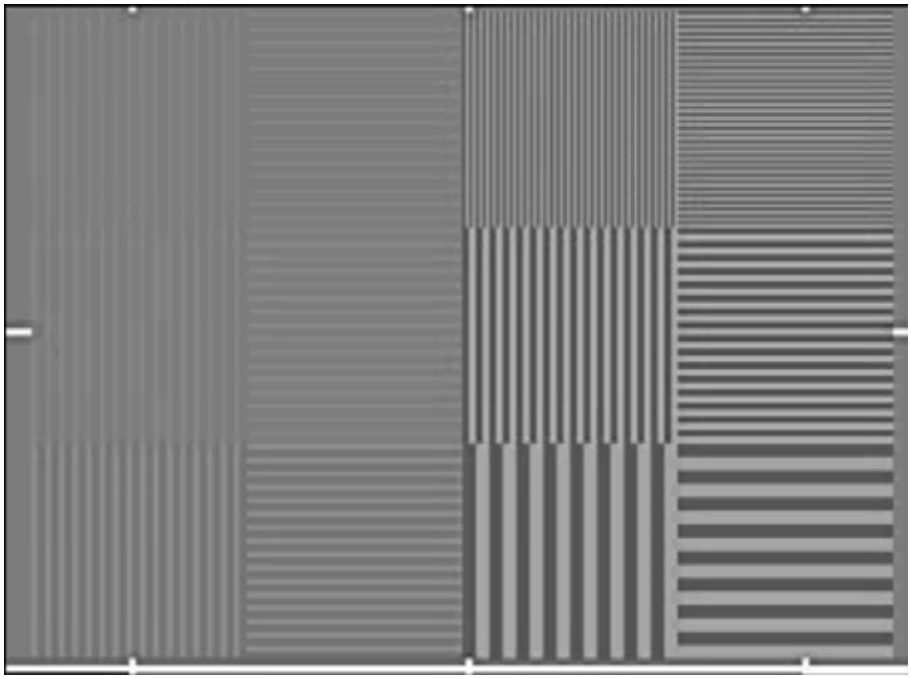

Fig. 3: Vertical and horizontal line groups

NOTE

If image quality problems with the monitor displays are experienced, proceed with the troubleshooting steps described in the following table.

The error descriptions listed in the table and the troubleshooting steps associated with them apply to all monitors on the TFT support arm and in the control room.

Error description	Troubleshooting steps
Insufficient monitor contrast (5% and/or 95% fields in the SMPTE test image (Fig. 2 / p. 9) not visible)	- Check the luminance in the 0% and 100% fields of the test image using the SMFit instrument (CRT and TFT monitors) in accordance with the document "Quality Assurance; System; Image Quality Quick Test" (document number: SPL5-330.820.01.xx.). - Adjust the 5% field of the SMPTE test image using the brightness control on the monitor (see the operator's manual of the monitor). - Adjust the 95% field of the SMPTE test image using the contrast control on the monitor (see operator's manual of the monitor).
Vertical line groups (Fig. 3 / p. 9) not detectable as such	- Correct the phase setting (see monitor operator's manual and the subchapter (Monitor phase setting / p. 12))
Horizontal line groups (Fig. 3 / p. 9) not detectable as such	- Resolution check (resolution of 1280 x 1024 pixels is required; see operator's manual of the monitor)
False hue on the monitor (for example, a color signal is missing)	- Measurement of the video level at the BNC connections directly on the monitor (if BNC connections are available on the monitor) - With VGA connection on the monitor, measure using a T connector at the video splitter D233. (Note: The video level is 650mV - 750mV positive and 300mV negative.)

Error description	Troubleshooting steps
Image display on the monitor blurred	- Correct the phase setting using the autoadjust function, in accordance with the operator's manual or the “Replacement of Parts“ document for the monitor in question, and using the test image "TFT auto calibration test image" (see sub-chapter (Monitor phase setting / p. 12));
Insufficient monitor image quality (individual line groups in (Fig. 2 / p. 9)(Fig. 3 / p. 9) are not detectable as such)	- Check connection cable for defects (defective or pushed back pins, loose plugs, broken cable, etc.). - Swap the signal cables at the output of the same video splitter D233 (Fig. 7 / p. 18). - Swap the signal cables at the inputs of the two video splitters - Swap the signal cables at the PC graphics card outputs. - Connect the monitor directly to the graphics card output of the PC. - Unplug the signal cables at the outputs of the video splitters D233 and test the resistance value between the cable litz wire and the shield. (Note: The resistance value R must be 75 Ω.)

NOTE

Note that the signal cables must be connected to the monitor when the resistance value is measured.

NOTE

If the troubleshooting steps described in the table do not solve the problem, bridge over the optical isolating amplifier in the ASPIA container and repeat the test.

Monitor phase setting

NOTE

For the phase setting, load the "EXP_TestimageExposure" test image (TFT Auto calibration test image) from the local database in the Patient Browser (under "IQ test images") (Fig. 4 / p. 12) into the Viewer (Fig. 5 / p. 13) and display the test image on all on-site system monitors. The same test image is located in the Patient Browser under "Service Patient\Test Images" with the designation "Auto Calibration".

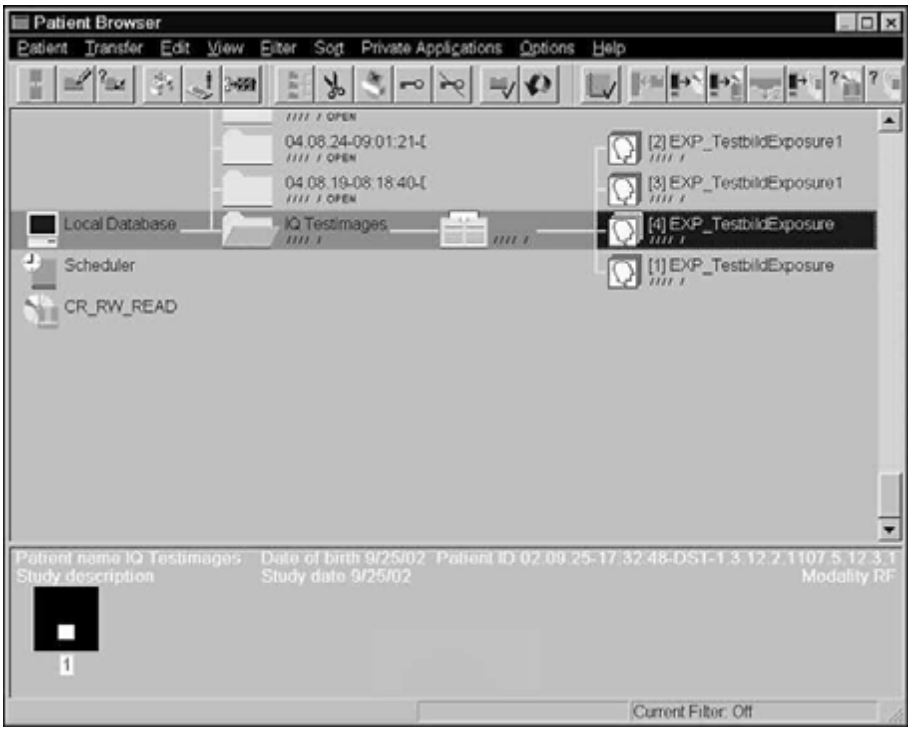

Fig. 4: Patient Browser_IQ Test Images

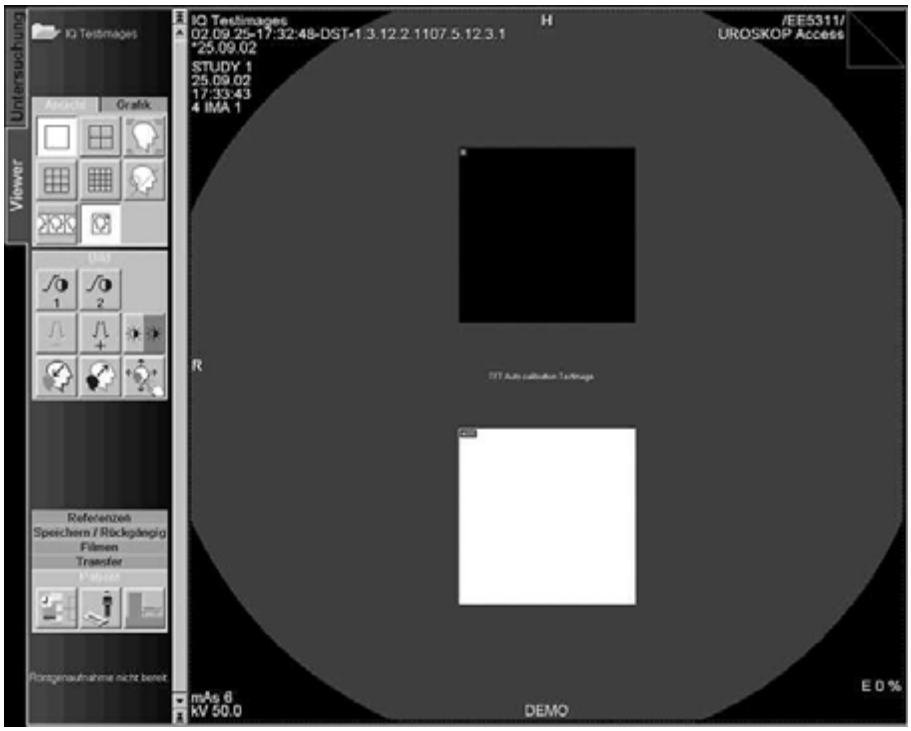

Fig. 5: Viewer

- Perform the phase setting on the monitor by means of the autoadjust function, in accordance with the operator's manual of the affected monitor.

NOTE

With looped-in scan converter, the phase setting cannot be performed using the "TFT auto calibration test image" and the autoadjust function of the live monitor in the control room. The phase setting must be corrected manually.

Systems with the urodynamics option

NOTE

Because of the looped-in scan converter, vertical bars or black lines can appear on the live monitor in the control room.

Configuration of the scan converter

NOTE

There are two types of scan converter, which differ in the color of the housing and in the type designation:

- Corioscan Pro S,

- TVone CS-500A.

Both have the same part number, 30 84 134, since they are technically identical.

The parameter "CSync In Fr" can no longer be selected and configured in the model TVone CS-500A.

- Check the settings of the scan converter by referring to the following table.

NOTE

The Engineering menu can be selected as described below.

- Press the **Menu** key until the **Adjust: Advanced...** menu is displayed.
- Press the **+** key within 15 s.
- Use the **Menu** key to select the **Advanced... Engineering...** menu and press the **+** and **-** key simultaneously to enter the **Engineering** menu.
  - Press the **Menu** button when the sub-menus **CV Filter** and **DAC Ref.** appear.

NOTE

You can return to the Advanced menu as described below.

- Select **Adjust: Exit** with the **Menu** key.
- Use the **+** key to return.

Tab. 1 Parameter table of the scan converter

Parameters	Default value (PAL)	Default value (NTSC)
Menu **Screen Size**[1]		
Out H-Center	79	79
Out H-Width	93	94
Out V-Center	160	132

Parameters	Default value (PAL)	Default value (NTSC)
Out V-Height	260	215
Menu **Manual Set**[2]		
VGA Left	18	18
VGA Width	47	47
VGA Top/4	7	7
VGA Bot/4	266	266
Menu **Advanced**		
Video Standard	PAL	NTSC
Output Signal	RGB	RGB
H. Soften	Off	Off
Sense	1	1
RGB Term.	Off	Off
Sync In	VGA HV	VGA HV
CSync In Fr[3]	70	70
Sync Out	-CS-CS	-CS-CS
Menu **Engineering**		
ADC Ref.	131	131
DAC Ref.	65	65
CV Filter	0	0
Adj. Osc.	0	0
SC/H Phase	4	4
Y/C delay	1	1

1. The parameters in the menu **Screen Size** (Out H-center, Out H-width, Out V-center, Out V-height) can vary from customer to customer, depending on the factory-set monitor settings implemented by the manufacturer in the urodynamic system.
2. The parameters in the menu **Manual Set** (VGA left, VGA width, VGA top/4, VGA bott/4) can vary from customer to customer, depending on the factory-set monitor settings implemented by the manufacturer in the urodynamic system
3. For the scan converter model TVone CS-500A, this parameter is no longer selectable.

- Should changes to the scan converter settings be required, proceed as described below.
  - Press the **Menu** key until the **Adjust: Advanced...** menu appears. Press the **+** key within 15 s.
  - Activate the **Output Sig** menu item with the **Menu** key and select **RGB** with the **+** or **-** key.
  - Activate the **RGB Term.** menu item with the **Menu** key and select **Off** with the **+** or **-** key.
  - Activate the **Video Std.** menu item with the **Menu** key and select the standard corresponding to the country with the **+** or **-** key: **PAL** for Europe; **NTSC** for USA.
  - Select the **Engineering** menu under the **Advanced...Engineering** menu by pressing the **+** and **-** keys simultaneously. The sub-menu is displayed.
  - Activate the **DAC Ref.** menu item with the **Menu** key and select **65** with the **+** or **-** key.
  - Activate the **CV Filter** menu item with the **Menu** key and select **0** with the **+** or **-** key.
  - Exit the **Engineering** menu by selecting **Engineering...Exit** and confirm with the **Menu** key.

After changing the default values of the scan converter, save the modifications by simultaneously pressing the **Menu** and the **+** key (for 2 seconds). There is an acoustic confirmation when the settings are saved. Switch the scan converter off and back on again, and check the configuration once more.

Scan converter connections

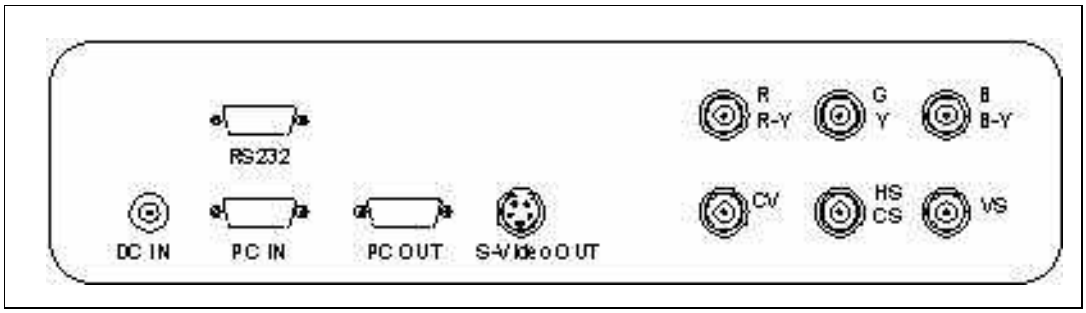

Fig. 6: Scan converter connections

Video splitter (D233) connections

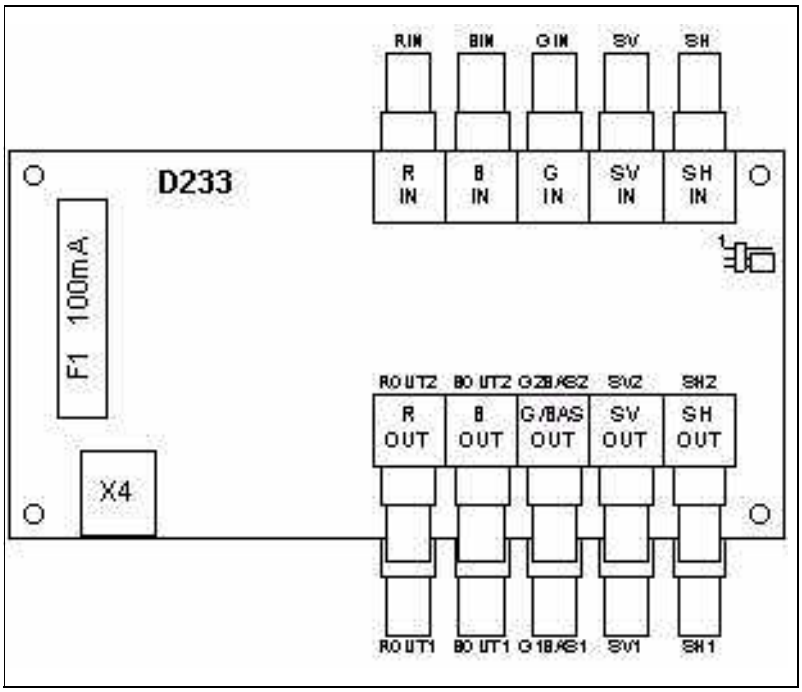

Fig. 7: Video splitter (D233) connections

NOTE

Further information on adjusting the scan converter settings can be found in the document "Installation and Start-up; Urodynamic Interface/Scan Converter" (SPL5-330.814.xx.xx).

General procedure

- In conclusion, perform the steps regarding the monitors outlined in the document “Quality Assurance; System; Image Quality Quick Test“ (SPL5-330.820.01.xx).

NOTE	**Lock the OSD menu of the monitor in question after completing the adjustment steps.**

NOTE

If problems occur regarding the image quality of X-ray exposures, proceed as described below.

Checking the user programs

- Select **Options > Configuration** in the UI.
  - ➪ The following window is displayed.

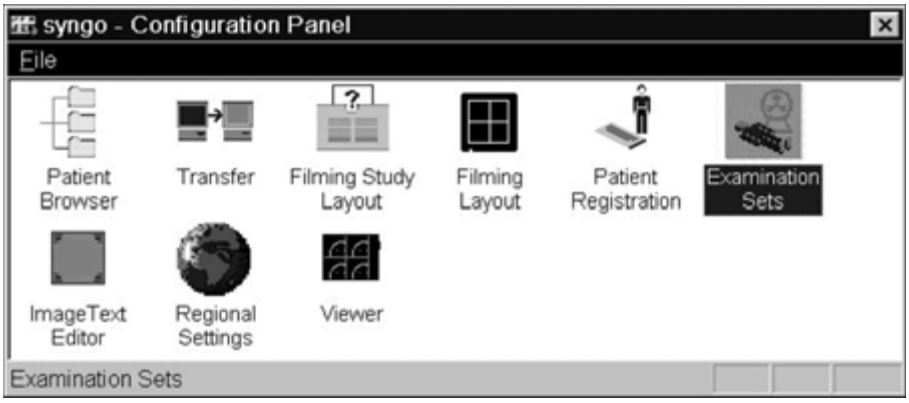

Fig. 8: syngo configuration panel

- Double click the **Examination Sets** icon.
  - ➪ The following window is displayed.

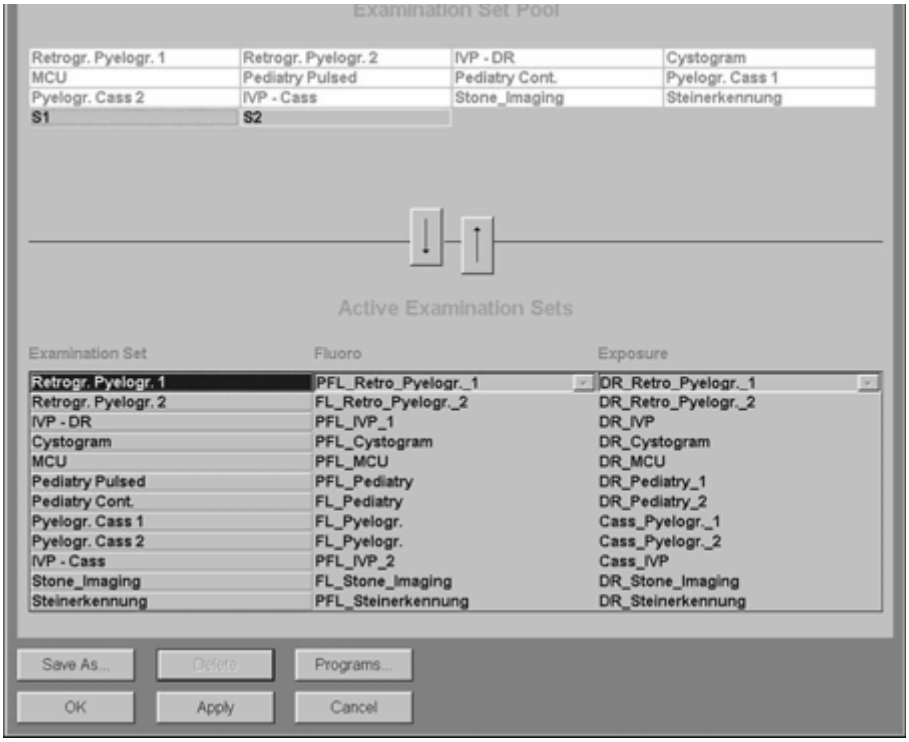

Fig. 9: Examination Set Configuration_Retrogr. Pyelogr. 1

- Select the topmost active standard user program, e.g. "Retrogr. Pyelogr. 1" under **Active Examination Sets**, (Fig. 9 / p. 21) and select the **Programs** button.
  - ➪ The following window appears.

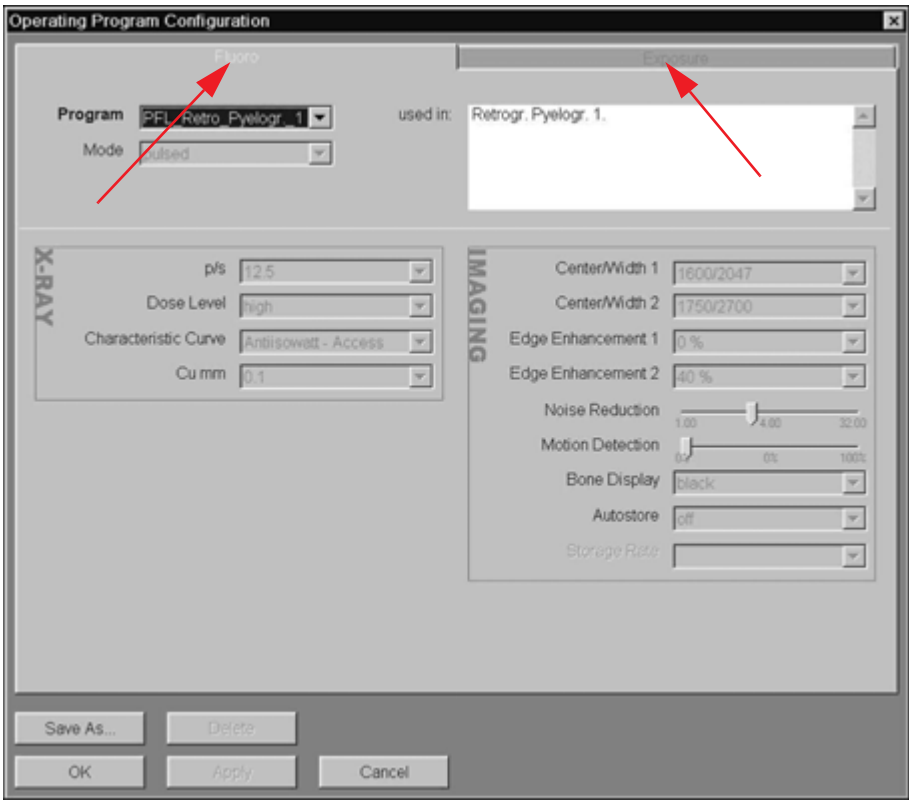

Fig. 10: Operating Program configuration

- Check whether different values are entered in the **Fluoro** task card (see arrow; (Fig. 10 / p. 22)) under **Imaging > Center/Width 1** and **Center/Width 2**. The same applies for **Edge Enhancement 1** and **Edge Enhancement 2**.
- Check whether different values are entered in the **Exposure** task card (see arrow; (Fig. 10 / p. 22)) under **Imaging > Center/Width 1** and **Center/Width 2**. The same applies for **Edge Enhancement 1** and **Edge Enhancement 2**. Furthermore, “C 0“ must not be entered under **Device > Characteristic**.
- Repeat the work steps described above for a second standard user program.

NOTE

The configuration of the factory default user programs is not according to specification if the following can be found:

- **The same values for "Center/Width 1" and "Center/Width 2" are entered in the Fluoro task card under "Imaging" and/or**
- **The same values for "Edge Enhancement 1" and "Edge Enhancement 2" are entered in the Fluoro task card under "Imaging" and/or**
- **The same values for "Center/Width 1" and "Center/Width 2" are entered in the Exposure task card under "Imaging" and/or**
- **The same values for "Edge Enhancement 1" and "Edge Enhancement 2" are entered in the Exposure task card under "Imaging" and/or**
- **The characteristic C 0 is entered in the Exposure task card under "Device > Characteristic".**

NOTE

If the configuration of the user programs is not according to specification, proceed as described in the following section "User programs not according to specification".

User programs not according to specification

NOTE

Note the parameters of the customer-specific user programs before performing the next work step!

- If any user programs are found to be incorrectly configured, perform a restore of the default examination sets in accordance with the document "Startup; System; UROSKOP Access Imaging System VA14A" (SPL-330.815.05.xx) and repeat the the user program check described in this chapter.
  - The default examination sets are delivered on the CD "UROSKOP Access Service Tools" located at the system in the German and English languages.
- The customer-specific examination sets must be configured subsequently (see document "Startup; System; UROSKOP Access Imaging System VA14A" [SPL-330.815.05.xx]).
- Perform a backup of the examination sets in accordance with the document "Startup; System; UROSKOP Access Imaging System VA14A" (SPL-330.815.05.xx).

Checking the edge kernel

First test step

- Select **Local Service** in the UI under **Options**.
  - ➪ The following window appears.

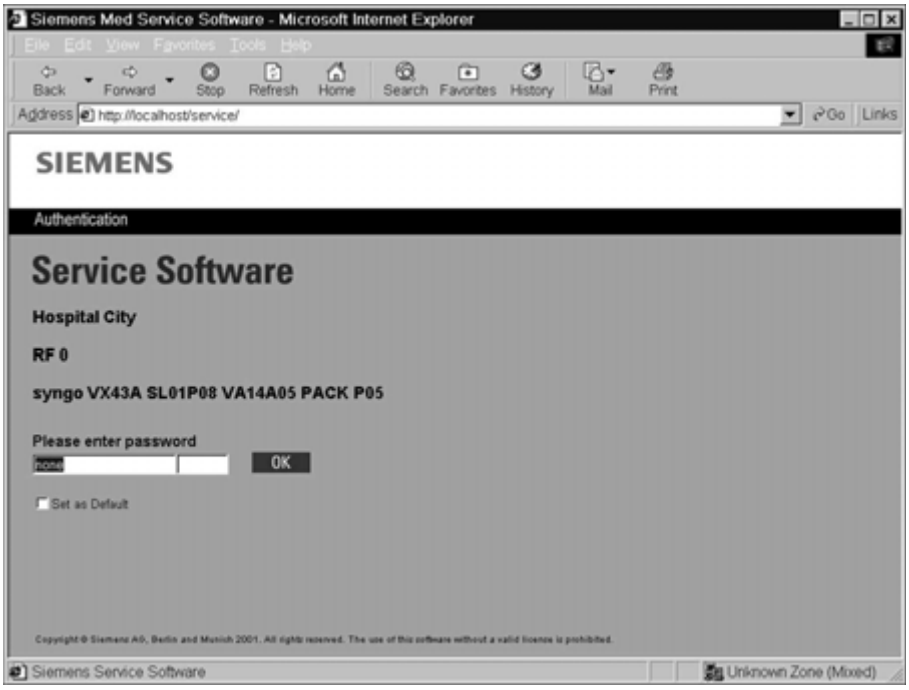

Fig. 11: Authentication

- Enter the service key under **Please enter password**.
- Confirm with **OK**.
  - ➪ The **Service Software Home menu** appears.
- Select **Browser** in the UI under **Patient** (Fig. 12 / p. 25) and go to **Local Database**.

Fig. 12: Patient browser/Home menu

- Select “Service Patient“ and the “ASPIA Test Image“ image (Fig. 13 / p. 25).
- Select the Viewer task card.

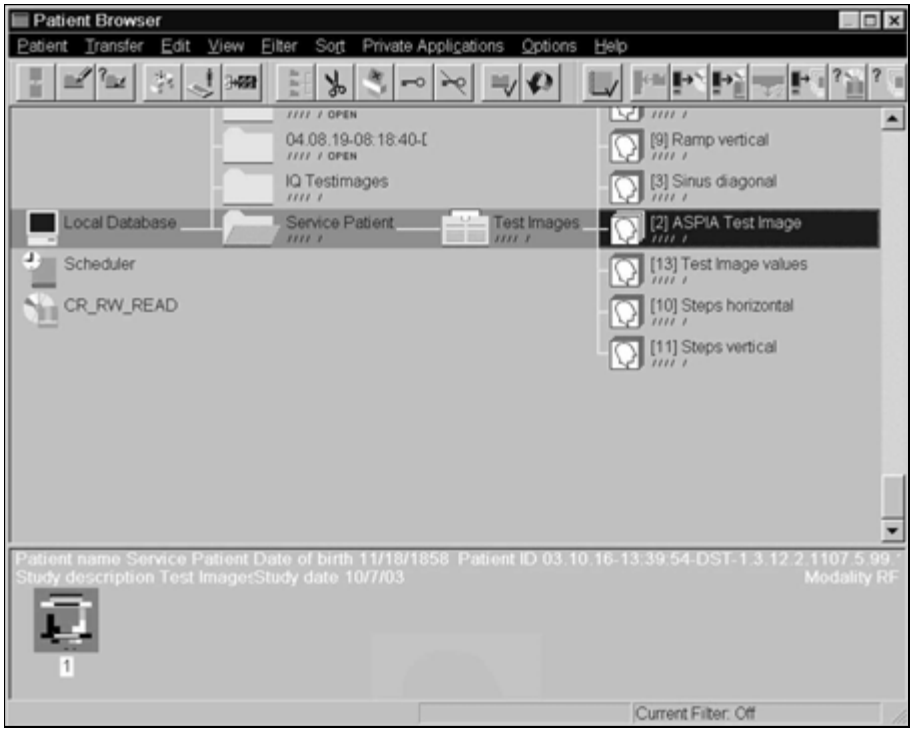

Fig. 13: Patient Browser_ASPIA Test Image

- Drag the “ASPIA Test Image“ image into the viewer.
  - ➪ The test image is displayed in the viewer.

NOTE

"Service Patient" under "Local Database" is displayed in the patient browser only if the Service Software Home menu is opened.

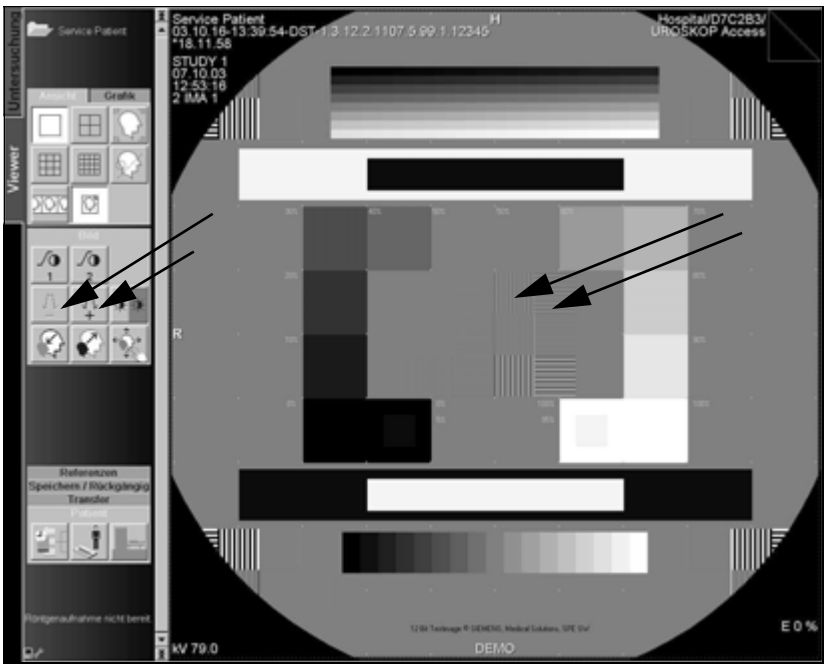

Fig. 14: Line tests

- Select different edge enhancements on the screen using the buttons marked with arrows (Fig. 14 / p. 26).

  ➪ The different edge enhancements must be detectable by an altered image impression in the line tests (see arrows (Fig. 14 / p. 26)).

NOTE

If no altered image impression is detectable after selection of an edge enhancement, perform the check described below ("Second test step" section) and repeat subsequently the test described in the "First test step" section.

Second test step

- Select **Local Service** in the UI under **Options**.
  ➪ The following window appears.

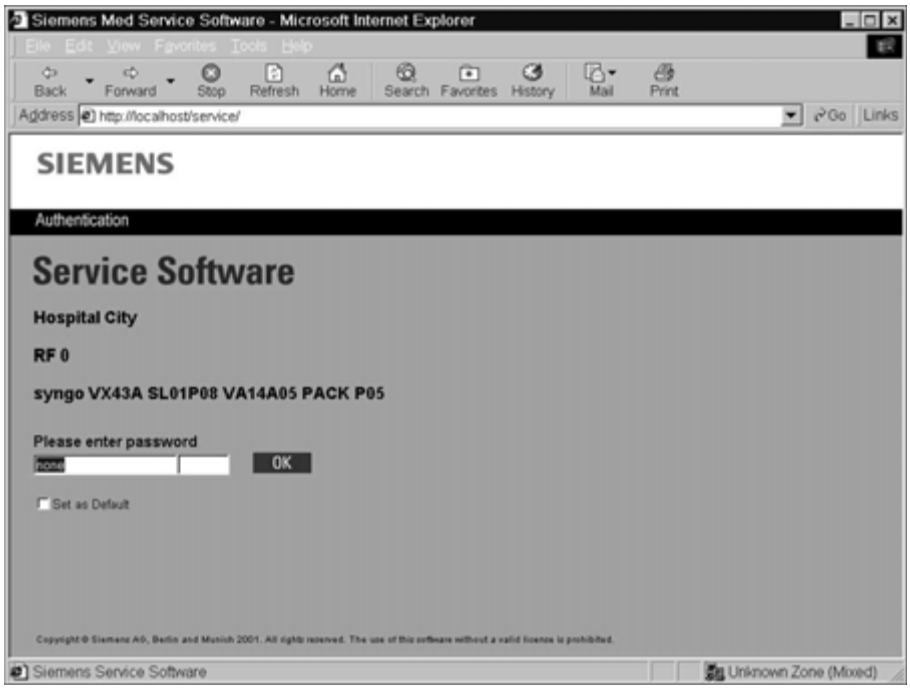

Fig. 15: Authentication

- Enter the service key under **Please enter password**.
- Confirm with **OK**.
  ➪ The **Service Software Home menu** appears.

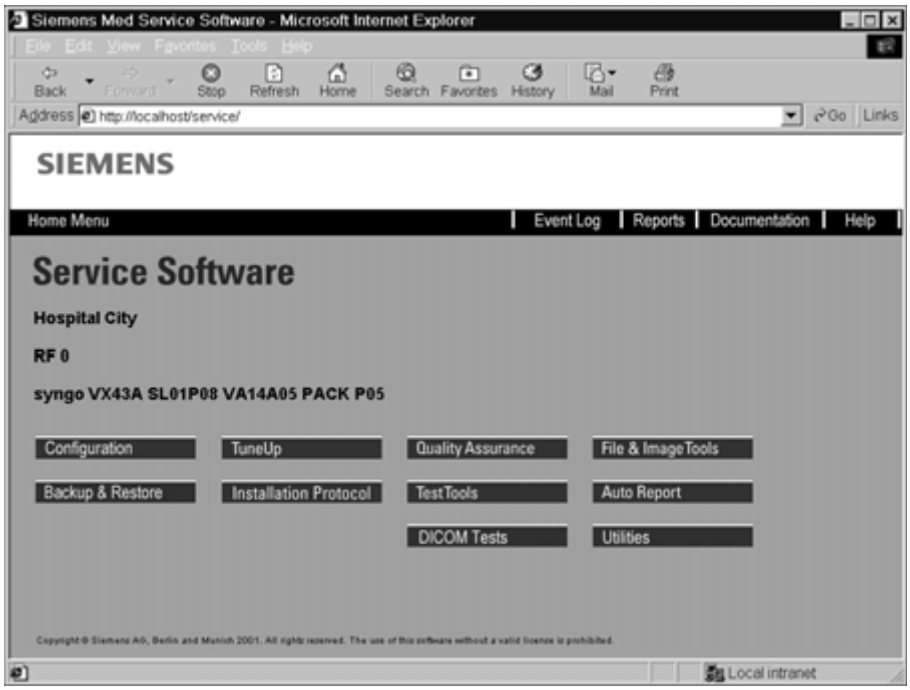

Fig. 16: Home menu

- Select **Utilities**.

Fig. 17: Utilities

- Select **Escape to OS** under **Source**.
- Check that **NT Command Interpreter** is selected under **Command**.
- Enter **start SVCUtiEdgeImport** ↵ under **Parameters**.

NOTE

Note that there must be a space between "start" and "SVCUtiEdge-import".

- Select **Go**.

  ➪ The following window appears.

NOTE

This window might be concealed, in which case other windows would need to be moved to reveal it.

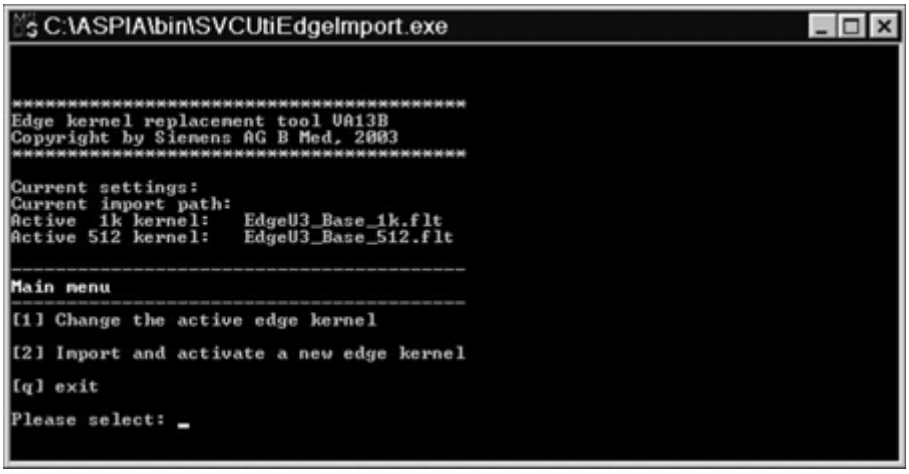

Fig. 18:

"EdgeU3_Base_1k.flt" is selected

If "EdgeU3_Base_1k.flt" is selected under **Active 1k kernel** (Fig. 18 / p. 28), proceed as described below.

- Click in the window "C:\ASPIA\bin\SVCUtiEdgeImport.exe".
- Enter **q** under **Please select:**.
  - ➪ The displayed window closes automatically.
- Select **Home** in the service menu.
- Close the **Service Software Home** menu.

"EdgeU1_Base_1k.flt" is selected

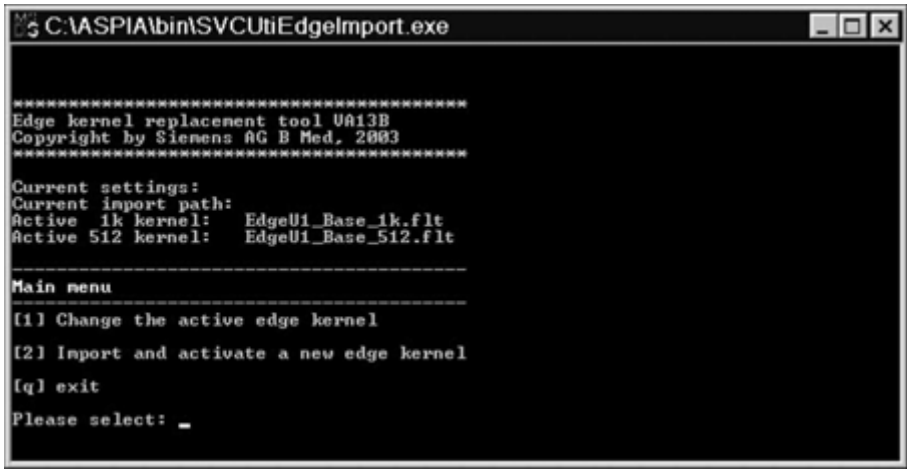

Fig. 19:

If "EdgeU1_Base_1k.flt" is selected under **Active 1k kernel** (Fig. 19 / p. 29), proceed as described below.

- Click in the window "C:\ASPIA\bin\SVCUtiEdgeImport.exe".
- Enter **1** under **Please select:**.
  - ➪ The following window appears.

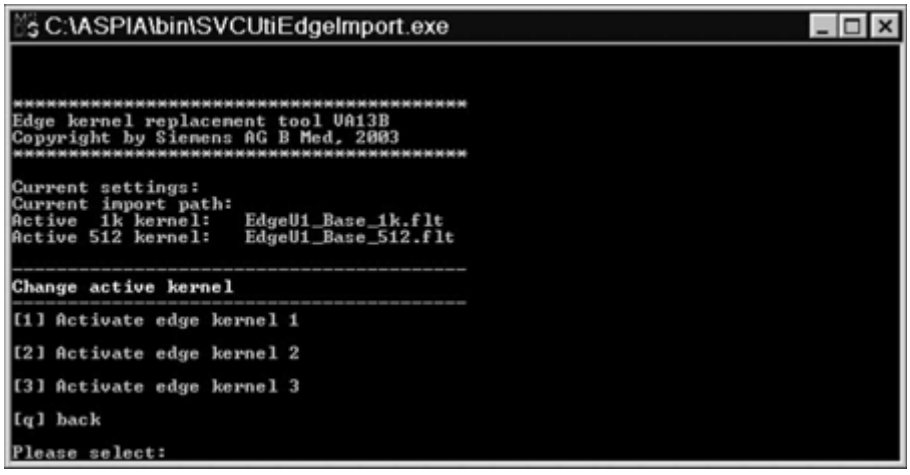

Fig. 20:

- Enter **3** under **Please select:**.
  - ➪ The following window appears.

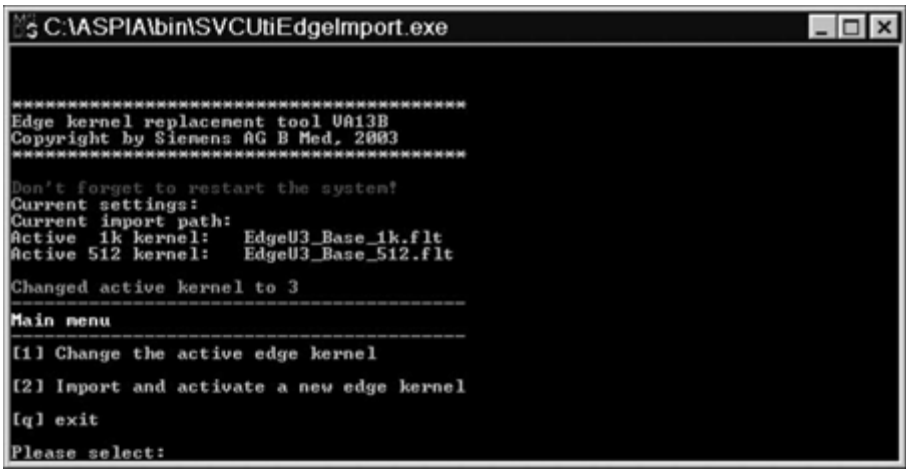
C:\ASPIA\bin\SVCUtiEdgeImport.exe
Edge kernel replacement tool VA13B
Copyright by Siemens AG B Med, 2003
Don't forget to restart the system!
Current settings:
Current import path:
Active 1k kernel: EdgeU3_Base_1k.flt
Active 512 kernel: EdgeU3_Base_512.flt
Changed active kernel to 3
Main menu
[1] Change the active edge kernel
[2] Import and activate a new edge kernel
[q] exit
Please select:

Fig. 21:

- Enter **q** under **Please select:**.
  - The displayed window closes automatically.
- Select **Home** in the service menu.
- Close the **Service Software Home** menu.
- Switch the UROSKOP Access off completely at the control console.
  - Wait until the system has completely shut down.
- Switch UROSKOP Access back on.

Additional user programs

- If the customer complains that the kidney stone display function is defective or missing, check whether the Steinerkennung (German term) / Stone_Imaging (English term) user programs supplied with software version VA14A of the imaging system software are installed and activated (described below) and are being used by the customer, or find out which program is being used by the customer to display kidney stones.
  - Select **Configuration** in the UI under **Options**.

  The following window appears.

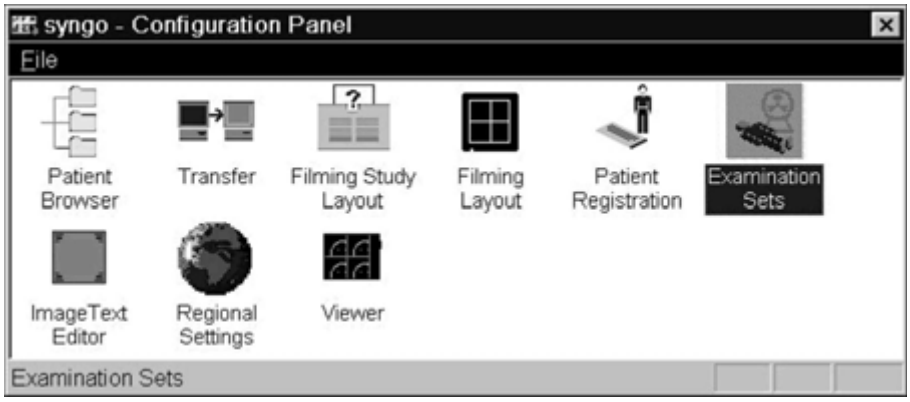

Fig. 22: syngo configuration panel

- Double click **Examination Sets** icon.
- The **Examination Set Configuration** window is displayed.

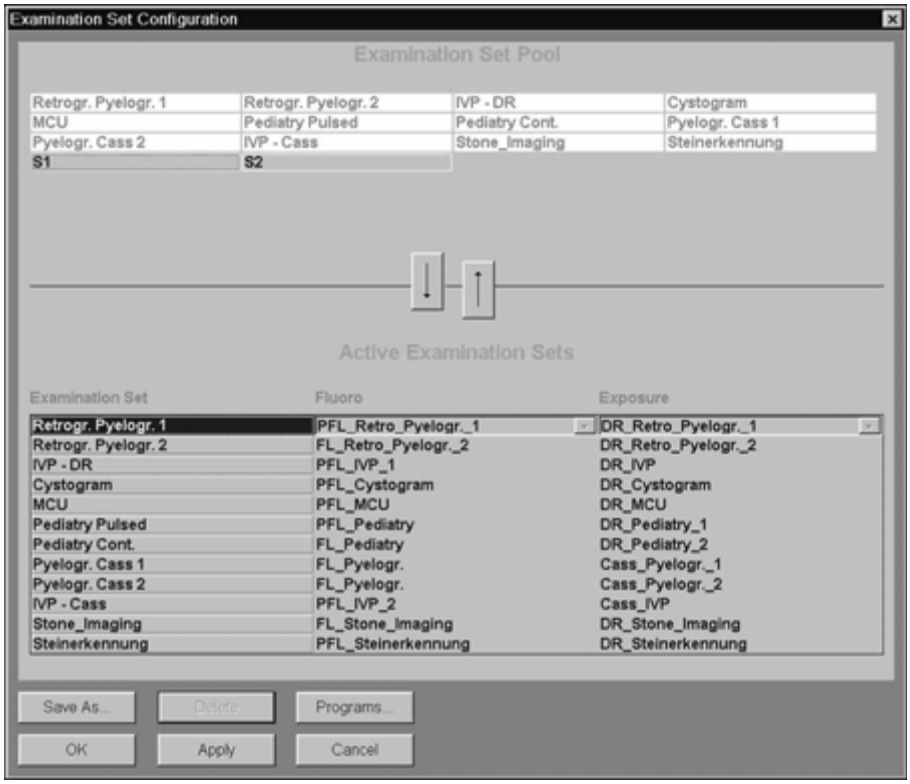

Fig. 23: Examination Set Configuration

- Check whether the "Stone_Imaging" and/or "Steinerkennung" user programs are entered under "Active Examination Sets".
- If these stone detection user programs are not installed and activated, install these user programs according to the document "Startup; System; UROSKOP Access Imaging System VA14A" (SPL-330.815.05.xx).

Noise artifacts in the image

Check the dose values as described below.

- Select **Local Service** in the UI under **Options**.

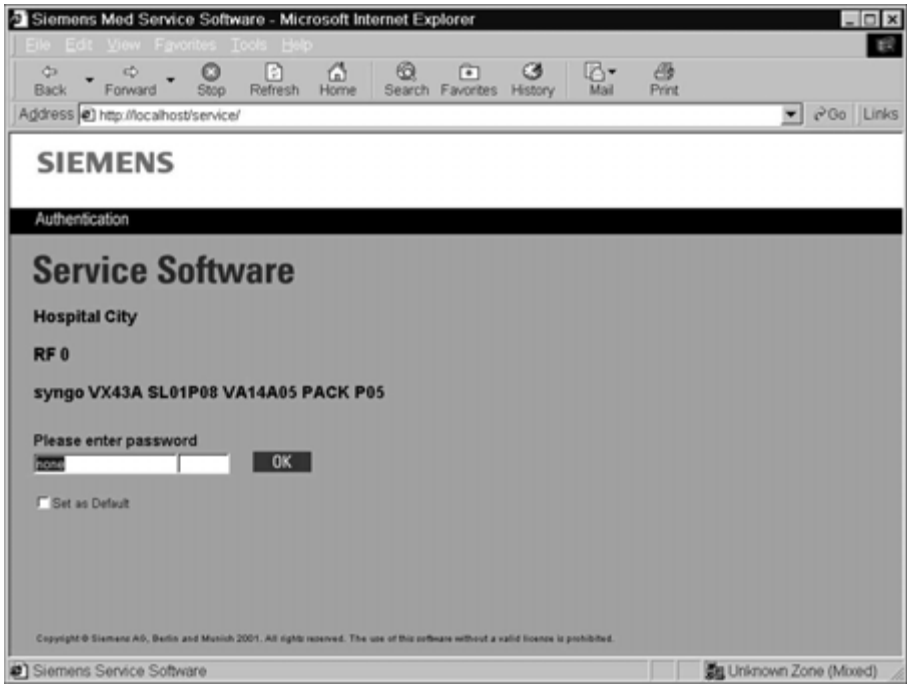

Fig. 24: Authentication

- Enter the service key under **Please enter password**.
- Confirm with **OK**.

  ➪ The **Service Software Home** menu appears.

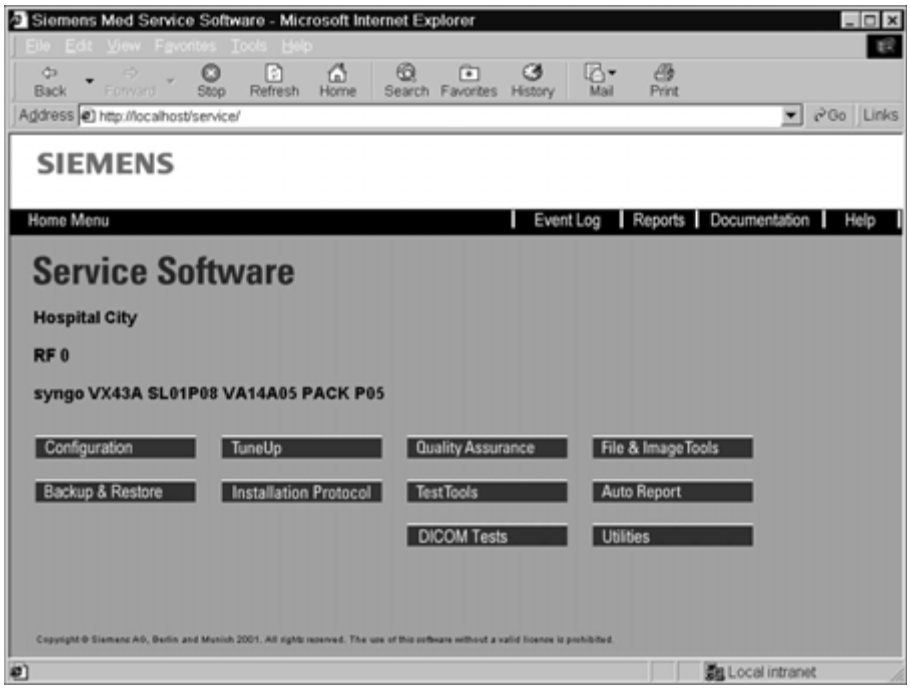

Fig. 25: Home menu

- Select **Configuration**.

Fig. 26: Configuration

- Select **Next**.
- Select **X-Ray System** under **Imaging System**.

Fig. 27: Configuration _X-Ray System

- Check whether the dose or dose rate values agree with the values listed in the "Test certificate 1" (condition on delivery of the Uroskop Access systems starting July 2003). Should this not be the case, enter the values from the "Test certificate 1" (located in the system binder).
- Confirm the change of the default values with **Save** and **Home**.

- If the "Test certificate 1" is not available on site, send the last backup available on site of the "ASPIASettings" directly to the UPTIME Service Center with a detailed description of the IQ problem and the system serial number.
- Perform a check of the dose rate in accordance with the document "Replacement of Parts; Basic unit and Imaging system" (SPL5-330.841.01.xx).

Final Check

- In conclusion, perform the image quality test in accordance with the document "Quality Assurance; System; Image Quality Quick Test" (SPL5-330.820.01.xx).

NOTE

If any IQ problems with the DICOM camera are experienced, work through the following workflow sequentially.

Checking test printouts

- Select **Local Service** in the UI under **Options**.

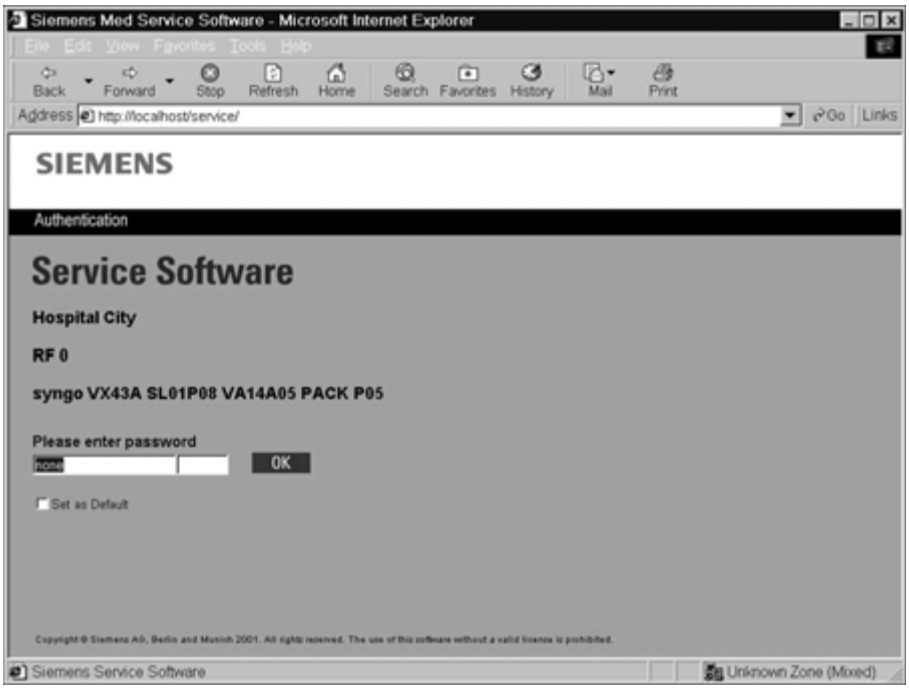

Fig. 28: Authentication

- Enter the **service key** ↵ under **Please enter password**.
- Confirm with **OK**.

  ➪ The **Service Software Home** menu appears.
- Select **Browser** in the UI under **Patient** (Fig. 29 / p. 39) and go to "Local Database".

Fig. 29: Patient Browser/Home menu

- Select "Service Patient" and the "ASPIA Test Image" image (Fig. 30 / p. 39)
- Select the Viewer task card.

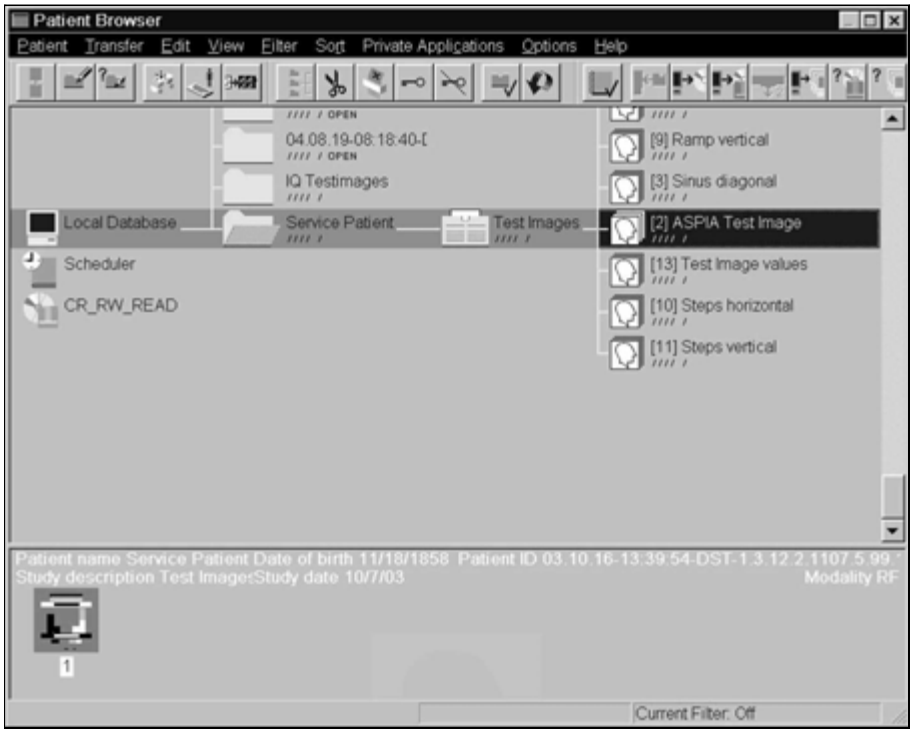

Fig. 30: Patient Browser_ASPIA Test Image

- Drag the "ASPIA Test Image" test image into the Viewer.
  - ➪ The test image is displayed in the Viewer.

NOTE

The "Service Patient" under "Local Database" is displayed in the patient browser only if the Service Software Home menu is opened.

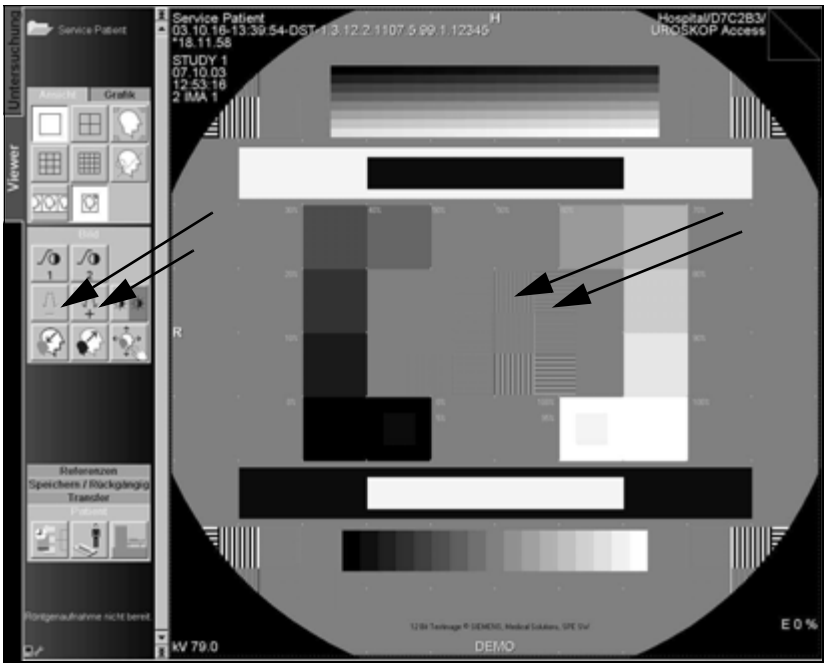

Fig. 31: Line tests

- Select the different edge enhancements on the screen with the aid of the buttons marked with arrows in (Fig. 31 / p. 40) and print out two images with different edge enhancements on the DICOM camera being tested.

  ➪ The different edge enhancements must be detectable on the printed film, based on the different image impression in the line tests (see arrow in (Fig. 31 / p. 40)).

NOTE

If the customer prints in the 35 cm x 43 cm format on the DICOM camera being tested, a four-on-one image with the edge enhancements of 0%, 20%, 40% and 80% must be printed out.

In smaller film formats (< 35 cm x 43 cm) the edge enhancements 0%, 20%, 40% and 80% must be printed out as single images.

- Close the patient and load the "ASPIA Test Image" image into the Viewer once more.
- Print out the test image on the DICOM camera being tested. Assess this image using the guidelines laid out in the document "Quality Assurance; System; Image Quality Quick Test" (SPL5-330.820.01.xx) and compare the measured values with those of the Image Quality Quick Tests located on site.

NOTE

If the examination of test printouts as described in this chapter reveals deviations from system function specifications, proceed as described below in the section "Checking the syngo configuration of the DICOM camera".

Checking the syngo configuration of the DICOM camera

- Select **Local Service** in the UI under **Options**.

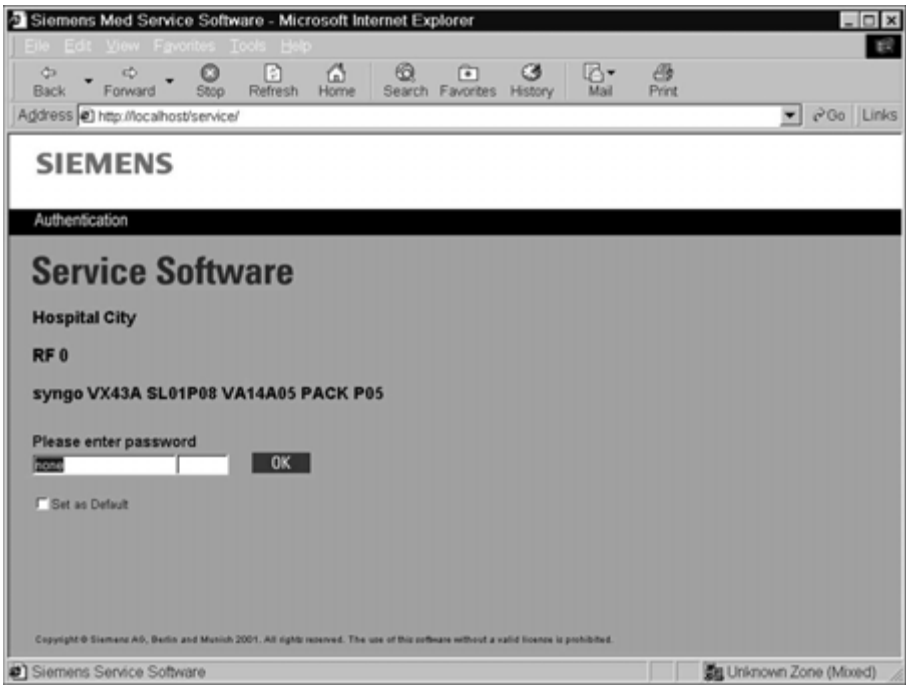

Fig. 32: Authentication

- Enter the **service key** ↵ under **Please enter password**.
- Confirm with **OK**.
  - The **Service Software Home** menu appears.

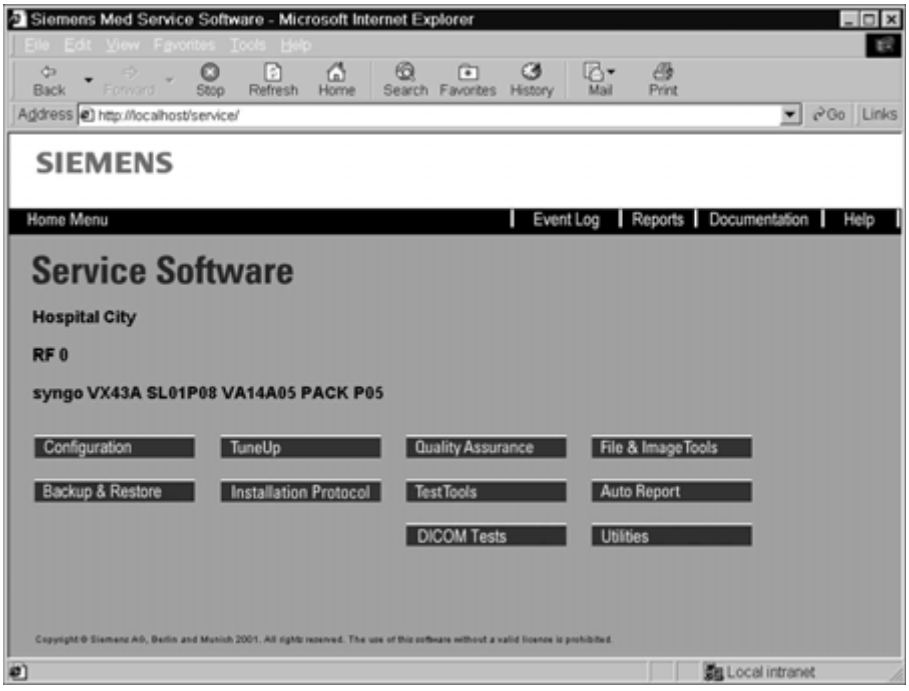

Fig. 33: Home menu

- Select **Configuration**.

Fig. 34: Configuration

- Select **Next**.
- Select **LUT Files** under **DICOM**.

Fig. 35: Configuration_DICOM_LUT Files

- Select **>**.

Fig. 36: Configuration_DICOM_LUT Files_Image type

- Check whether "xrfCorr16b-bspline" is selected as **Correction LUT** under **XRFImage**.
  - If "xrfCorr16b-bspline" is not selected, please select it.
- Check whether "Bilinear" is selected under **Interpolation for printing**.
  - If "Bilinear" is not selected, please select it.
- If you have made changes in this syngo screen, select the **Save** button and then **Home**.
  - If you have made no changes, exit the syngo screen with **Home**.

NOTE

If the film density is clearly too low (image impression on the screen and on the printout differ significantly), even though "xrfCorr16b-bspline" is selected under "XRFImage," then the DICOM camera is not working internally with a linear characteristic as specified.

Select "nothing selected" as "Correction LUT" under "XRFImage" as a temporary measure.

NOTE

If the examination process recommended in this document is not successful, proceed as described below.

- Write a Customer Complaint and make the following information available as well.

1. Backups of the ASPIASettings, SoftwareSettings02, ExamSets and the XBurner package (for information on creating the backup see document "Startup; System; UROSKOP Access Imaging System VA14A" [SPL5-330.815.05.xx]);
2. DICOM image files of the X-ray exposures complained about by the customer, with an exact description of what the customer is complaining about (e.g. tissue structure, organ margin not detectable, catheter not detectable);
3. The IQ quick test last performed, completely filled out;
4. Information about the monitor (live/reference monitor in the control room or on the TFT support arm) and type designation of the monitor or camera exhibiting the IQ problems;
5. Configuration of the system (which monitor types there are in the control room);
6. Printed test images (SMPTE) of the affected DICOM camera (if DICOM camera is exhibiting IQ problems; see chapter (DICOM camera image quality test / p. 37));
7. Measured value of the lighting intensity in the room containing the monitor used by the physician for reporting (see section "Measuring the lighting intensity");
8. Is the occurrence of the IQ problem sporadic or reproducible?

NOTE

If the printouts of the SMPTE test images produced directly after startup of the camera are available at the customer location, then these must be enclosed with the complaint together with the current printouts, if the DICOM camera exhibits IQ problems.

NOTE

Note that DICOM image files must be anonymized before they are sent to the complaint department, i.e. neither real patient names nor dates of birth may be contained in the DICOM image file.

Measuring the lighting intensity

NOTE

The lighting intensity should be measured with a luxmeter.

If such an instrument is not available on site, you may proceed as described below with the "Mavo Monitor" measuring device.

- Position the sensor of the Mavo Monitor as shown in (Fig. 37 / p. 45)
- Multiply the value (in cd/m^2) displayed on the Mavo Monitor by a factor of 5.6.
  - ➪ This converts the measured value of the lighting intensity to the unit of lux.

Fig. 37: Mavo Monitor

Chapter 1	• subchapter (Service patient / p. 6): new
Chapter 2	• subchapter (Monitor phase setting / p. 12): first note revised • subchapter (Configuration of the scan converter / p. 14): completely revised (column “Default value (NTSC)“ added; footnotes added; notes and bullets revised)
All chapters	Document was newly generated in DMS.